Remarks/Arguments

Claims 1-27 are pending in the present application. Claims 4, 6, 13, 15, 22 and 24 have been amended. No claims have been canceled, and no claims have been added. Applicants have carefully considered the cited references and the Examiner's comments, and believe claims 1-27 patentably distinguish over the references and are allowable in their present form. Reconsideration of the rejection is, accordingly, respectfully requested in view of the above amendments and the following comments.

I. 35 U.S.C. § 102, Anticipation

The Examiner has rejected claims 1-3, 5, 7-12, 14 and 16-18 under 35 U.S.C. § 102(e) as being anticipated by Skelly et al. (U.S. Patent no. 6,661,810). This rejection is respectfully traversed.

In rejecting the claims, the Examiner states as follows:

> In re claim 1, Skelly discloses a method for removing the effect of clock skew between data processing systems [abstract; col. 3, l.62 – col. 4, l.13], comprising:
> - Making delay measurements between two data processing systems [device 102s; sender and receiver] connected by a network [100] [fig. 1; col. 9. ll.1-6; col. 10. ll.29-39].
> - Forming a set of data points, wherein each data point in the set of data points comprises a time [t] and a delay measurement [d] for the respective time [fig. 4; col. 7, ll.7-20; col. 9, ll.6-12].
> - Finding convex hull [feasible region] of the set of data points, wherein the convex hull is bounded by a number of line segments [col. 9, ll.16-19; col. 10. ll.50-63; varying y-intercept and slope yields various lines bounding feasible region].
> - Selecting a one of the line segments that optimizes an objective function [col. 9, ll. 19-24; col. 10, l.64 – col. 11, l.20].
> - Extrapolating the one of the line segments to obtain an affine function [col.9, ll.24-26].
> - Removing the effect of clock skew between the two data processing systems as characterized by the affine function [col. 2, ll.51-58, col. 13, l.65 – col. 19, l.40].

Office Action dated July 27, 2004, pages 2 and 3.

Claim 1 of the present application reads as follows:

1. A method for removing the effect of clock skew between data processing systems, comprising:

making delay measurements between two data processing systems connected by a network;

forming a set of data points, wherein each data point in the set of data points comprises a time and a delay measurement for the respective time;

finding a convex hull of the set of data points, wherein the convex hull is bounded by a number of line segments;

selecting a one of the line segments that optimizes an objective function;

extrapolating the one of the line segments to obtain an affine function; and

removing the effect of clock skew between the two data.

Skelly does not disclose "finding a convex hull of the set of data points, wherein the convex hull is bounded by a number of line segments" as recited in claim 1. The Examiner refers to col. 9, lines 16-19 and col. 10, lines 50-63 of Skelly as disclosing this feature. Col. 9, lines 16-19 of Skelly reads as follows:

> At a step **218**, the user may then define a feasible region of solution as the set of points for each time period that is lower than the measured delay for each time period.

In Col. 10, lines 50-63 of Skelly, the "feasible region of solution" for an estimate α of the ratio between the speed of a sender clock and the speed of a receiver clock and for an estimate β of the end-to-end delay of a first packet consistent with the receiver clock is defined according to a specific equation set forth therein.

Nowhere in the sections of Skelly referred to by the Examiner, or elsewhere in Skelly, is any mention made of a convex hull or of "finding a convex hull of the set of data points, wherein the convex hull is bounded by a number of line segments" as recited in claim 1.

A convex hull is known in the art and is defined on page 9, line 25 to page 10, line 3 of the specification of the present application as follows:

> "The convex hull of a set of points (at least as the term is used in this document) is the smallest convex polygon such that each of the set of points is either on the boundary or in the interior of the polygon. Intuitively, if each of the points is represented by a nail sticking out of a board, the convex hull is the polygon obtained by extending a rubber band around the set of points."

A "feasible region of solution" as used in Skelly, on the other hand, is described in col. 9, lines 13-26 as follows:

> Next, at a step **214**, the user may determine a plurality of minimum delay data points consisting of the lowest delay for each of a plurality of time periods within the measurement sample. At a step **218**, the user may then define a feasible region of solution as the set of points for each time period that is lower than the measured delay for each time period. At a step **220**, the user may fit a line that is the closest line to the data points representing the minimum delay but that is within the feasible region of solution. The step **220** of fitting the line may be accomplished by minimizing the sum of the distances between the line and all the data points in the data set. Once the line has been fitted at the step **220**, the slope of the line provides a reliable, estimate of clock skew in a step **222** that is believed to be unbiased.

Skelly does not disclose "finding a convex hull of the set of data points, wherein the convex hull is bounded by a number of line segments". Instead, as indicated above, the feasible region of solution in Skelly is a "set of points for each time period that is lower than the measured delay for each time period". Skelly, accordingly, does not anticipate claim 1, and claim 1 should be allowable in its present form.

In addition, inasmuch as Skelly does not find a convex hull of a set of data points that is bounded by a number of line segments, Skelly also does not disclose "selecting a one of the line segments that optimizes an objective function", or "extrapolating the one of the line segments to obtain an affine function", as also recited in claim 1. Instead, in Skelly, as indicated above, "the user may fit a line that is the closest line to the data points representing the minimum delay but that is within the feasible region of solution". The line that is fit in Skelly is not a line segment bounding a convex hull, and is not the

one of the line segments bounding a convex hull that optimizes an objective function as required by claim 1, nor is such a line segment extrapolated to obtain an affine function as also required by claim 1.

For at least all the above reasons, claim 1 is not anticipated by Skelly, and withdrawal of the rejection thereunder is respectfully requested.

Claims 2, 3, 5, and 7-9 depend from and further restrict claim 1, and are also not anticipated by Skelly, at least by virtue of their dependency.

Independent claim 10 recites limitations similar to claim 1, and is also not anticipated by Skelly for at least the reasons discussed above with respect to claim 1. Claims 11, 12, 14, and 16-18 depend from sand further restrict claim 10 and are also not anticipated by Skelly, at least by virtue of their dependency.

Therefore, the rejection of claims 1-3, 5, 7-12, 14 and 16-18 under 35 U.S.C. § 102 has been overcome.

II. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 19-21, 23 and 25-27 under 35 U.S.C. § 103 as being unpatentable over Skelly in view of Forbes (U.S. Patent No. 6,539,490). This rejection is respectfully traversed.

In rejecting the claims, the Examiner acknowledges that Skelly does not disclose a particular interconnection of the components in the data processing system; and cites Forbes as disclosing this feature. Forbes, however, does not supply the deficiencies in Skelly as discussed above, and, accordingly, the claims are not unpatentable over Skelly in view of Forbes.

Furthermore, Skelly does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. Skelly actually teaches away from the presently claimed invention because it teaches a technique for estimating clock skew that is quite different from the present invention. Absent some teaching, suggestion, or incentive to modify Skelly to achieve the present invention, the presently claimed invention can be reached only through an improper use of hindsight using the Applicants' disclosure as a template to make the necessary changes to reach the claimed invention.

Therefore, the rejection of claims 19-21, 23 and 25-27 under 35 U.S.C. § 103 has been overcome.

III. Objection to Claims

The Examiner has stated that claims 4, 6, 13, 15, 22 and 24 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, claims 4, 6, 13, 15, 22 and 24 have been rewritten in independent form, and should now be allowed.

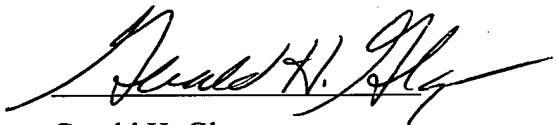
IV. Conclusion

For all the above reasons, it is respectfully urged that claims 1-27 patentably distinguish over the cited references and are allowable in their present form. This application is, accordingly, now believed to be in condition for allowance, and it is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: October 28, 2004

Respectfully submitted,



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